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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,463	04/24/2002	Alexander Furbach	P/1903-20	8410

7590 12/19/2003
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1180 Avenue of the Americas
New York, NY 10036-8403

EXAMINER

FLORES RUIZ, DELMA R

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,463

Applicant(s)

FURBACH ET AL.

Examiner

Delma R. Flores Ruiz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.



PAUL IP

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12 – 14, 16 – 19, and 21 - 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weingarten et al (6,393,035) in view of Fossey et al (5,361,268).

Regarding claim 12, Weingarten discloses a laser arrangement to produce a plurality of amplified laser pulses, comprising; a common arm including a pump unit (see Fig. 2, Character 1) having a pumped laser crystal (see Fig. 2, Character 2), the pump unit being configured to generate a plurality of laser pulses: a first resonator arm including a passive mode-locking arrangement configured to passively mode-lock phase of the laser pulses (see Fig. 2, Character 4, Abstract, Column 1, Lines 35 – 41, Column 3, Lines 5 – 35 and 59 – 61, Column 4, Lines 34 – 52, and 61 – 63); a second resonator arm active in an amplifying phase and being free of components that introduce losses;

(see Fig. 2, Abstract, Column 1, Lines 35 – 41, Column 3, Lines 5 – 35 and 59 – 61, Column 4, Lines 34 – 52, and 61 – 63). Weingarten discloses the claimed invention except for switching arrangement arranged and operative to selectively connect the common arm to one of the resonator arms and controllable to optically switch the laser pulses between the common arm and one of the resonator arms, wherein, during a pulse forming phase, the switching arrangement is controlled to switch the laser pulses between the common arm and the first resonator arm to mode lock the phases of the laser pulses, and during an amplifying stage, the switching arrangement is controlled to switch the laser pulses between the common arm and the arm to amplify the mode locked laser pulses to produce the amplified laser pulses. It would have been obvious at the time of applicant's invention, to combine Fossey of teaching a switching arrangement arranged and operative to selectively connect the common arm to one of the resonator arms and controllable to optically switch the laser pulses between the common arm and one of the resonator arms, wherein, during a pulse forming phase, the switching arrangement is controlled to switch the laser pulses between the common arm and the first resonator arm to mode lock the phases of the laser pulses, and during an amplifying stage, the switching arrangement is controlled to switch the laser pulses between the common arm and the arm to amplify the mode locked laser pulses to produce the amplified laser pulses with laser because a switch output pulses from lasers and laser systems switchable between two different wavelengths; to apparatus for controlling the power in the output of a laser or a laser system; and to apparatus for

producing and controlling a mixture of two different output wavelengths of a laser or a laser system. Switching arrangement user to for controlling the power in pulse trains of Q-switched laser beams in times less than the time between such pulses, and particularly in times less than the interval between Q-switched pulses at a repetition rate of the order of several kilohertz.

Regarding claim 13, Weingarten discloses the switching arrangement includes a first polarization sensitive beam driver (see Fig. 2, Character 53) optically coupled to the mode locking and amplifying arms, and further including a polarization rotating arrangement optically coupled to the beam divider and to the common arm, the polarization rotating arrangement being controllable to rotate a polarization of the laser pulses to switch the laser pulses of the common arm between one of the mode locking and amplifying arms (see Fig. 2, Column 11, Lines 17 – 67, Column 12, Lines 1 – 19).

Regarding claim 14, Weingarten discloses the polarization rotating arrangement is Pockels cells (Column 2, Line 8).

Regarding claims 16 – 19, Weingarten discloses the passive mode locking arrangement includes a saturable absorber (Abstract, Column 4, Lines 23 – 52), the saturable absorber is saturable semiconductor absorber and the saturable absorber is arranged to terminate the mode locking arm and mode locking arm includes a linear

loss element causing a high energy accumulation in the pumped laser crystal (see Figs. 1 – 2, 7, Abstract, Column 1, Lines 35 – 41, Column 3, Lines 5 – 35 and 59 – 61, Column 4, Lines 23 – 66, Column 8, Lines 30 – 39, and Column 12, Lines 20 – 24).

Regarding claims 21 – 23, Weingarten discloses a pump unit is continuous wave diode pump (see Fig. 2 Character 1, Column 10, Lines 48 – 53) a pumping arrangement configured to pump the pumped laser crystal (see Fig. 2, Character 2, Column 10, Lines 66 – 67) and the pumping arrangement includes one of a lamp-pump arrangement and a laser pump arrangement (see Fig. 2, Character 1 and 2).

Claims 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weingarten et al (6,393,035) in view of Fossey et al (5,361,268) further in view of Rieger et al (5,790,574).

Regarding claims 15 and 20 Weingarten discloses the claimed invention except for a second polarization sensitive beam driver arranged in a path of the laser to coupled out the amplified laser pulses and the linear loss element includes a $\frac{1}{4}$ platelett. It would have been obvious at the time of applicant's invention, to combine Rieger of teaching a second polarization sensitive beam driver arranged in a path of the laser to coupled out the amplified laser pulses and the linear loss element includes a $\frac{1}{4}$ platelett.

with laser because the seconds polarization sensitive is use to cause light wave to vibrate in a definite way and use a $\frac{1}{4}$ platelett for shifting the polarization of the outgoing beam by 90 degree.

Response to Arguments

Applicant's arguments filed 7/ 21 /2003 have been fully considered but they are not persuasive. Applicant's arguments with respect to claims 12 - 23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (703) 308-6238. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.



Delma R. Flores Ruiz
Examiner
Art Unit 2828



Paul Ip
Supervisor Patent Examiner
Art Unit 2828

DRFR/PI
December 15, 2003